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FILE COVERS 1907 - 22 Sep 2010 VOL 153 ISS 13
FILE LAST UPDATED: 21 Sep 2010 (20100921/ED)
REVISED CLASS FIELDS (/NCL) LAST RELOADED: Jun 2010
USPTO MANUAL OF CLASSIFICATIONS THESAURUS ISSUE DATE: Jun 2010
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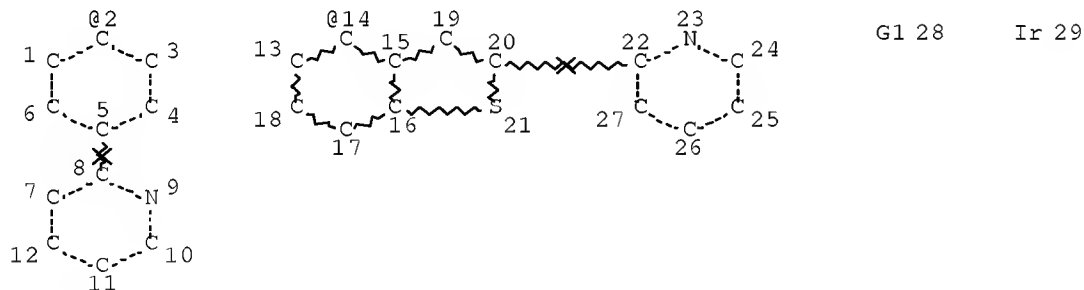
HCAplus now includes complete International Patent Classification (IPC) reclassification data for the third quarter of 2010.

CAS Information Use Policies apply and are available at:

<http://www.cas.org/legal/infcpolicy.html>

This file contains CAS Registry Numbers for easy and accurate substance identification.

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L3 STR
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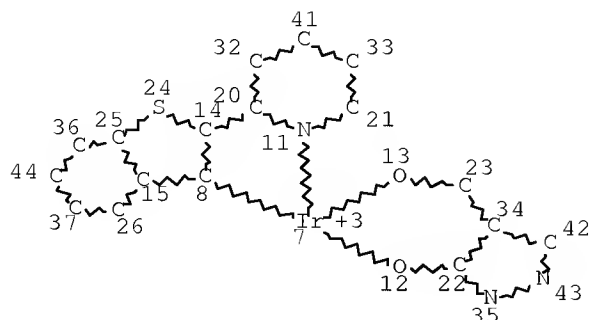
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DEFAULT ECLEVEL IS LIMITED
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RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 29
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STEREO ATTRIBUTES: NONE

L5 15716 SEA FILE=REGISTRY SSS FUL L3

L25 STR



NODE ATTRIBUTES:

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DEFAULT MLEVEL IS ATOM

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NUMBER OF NODES IS 24

STEREO ATTRIBUTES: NONE

L28 1 SEA FILE=REGISTRY SUB=L5 SSS FUL L25

L45 2 SEA FILE=HCAPLUS ABB=ON PLU=ON L28

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L45 ANSWER 1 OF 2 HCAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 2006:734542 HCAPLUS Full-text

DOCUMENT NUMBER: 145:198513

TITLE: Electroluminescent device fabrication by spin coating
electroluminescent organometallic complexes on coated
substrates

INVENTOR(S): Kathirgamanathan, Poopathy; Ganeshamurugan,
Subramaniam; Price, Richard

PATENT ASSIGNEE(S): Oled-T Limited, UK

SOURCE: PCT Int. Appl., 51 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2006077402	A1	20060727	WO 2006-GB169	20060119
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE,			

SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC,
 VN, YU, ZA, ZM, ZW
 RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE,
 IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ,
 CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH,
 GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY,
 KG, KZ, MD, RU, TJ, TM

EP 1839464 A1 20071003 EP 2006-702771 20060119
 R: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE,
 IS, IT, LI, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR
 CN 101107884 A 20080116 CN 2006-80002852 20060119
 JP 2008529212 T 20080731 JP 2007-551736 20060119
 US 20080160182 A1 20080703 US 2007-795007 20070710
 IN 2007DN05397 A 20070817 IN 2007-DN5397 20070712
 KR 2007102556 A 20071018 KR 2007-718852 20070817

PRIORITY APPLN. INFO.:

GB 2005-1426 A 20050122
 WO 2006-GB169 W 20060119

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

OTHER SOURCE(S): MARPAT 145:198513

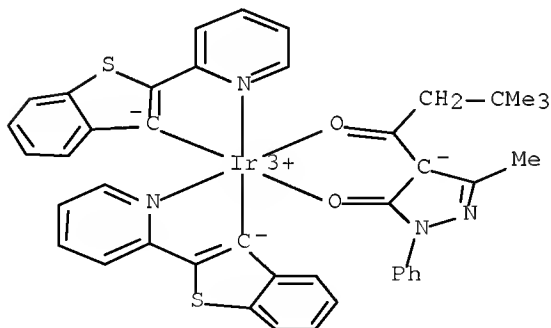
AB Methods of forming electroluminescent devices are described which entail depositing by spin coating a layer of an electroluminescent organometallic complex on a substrate (which is the anode) which is coated with a layer of a polymer. The polymer is preferably a conductive or charge-transporting polymer or material.

IT 863714-50-5

RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process); USES (Uses)
 (electroluminescent device fabrication by spin coating
 electroluminescent organometallic complexes on coated substrates)

RN 863714-50-5 HCAPLUS

CN Iridium, [4-[3,3-dimethyl-1-(oxo-κO)butyl]-2-phenyl-2,4-dihydro-5-methyl-3H-pyrazol-3-onato-κO3]bis[2-(2-pyridinyl-κN)benzo[b]thien-3-yl-κC]- (9CI) (CA INDEX NAME)



REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L45 ANSWER 2 OF 2 HCAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 2005:962358 HCAPLUS Full-text

DOCUMENT NUMBER: 143:275247

TITLE: Electroluminescent organometallic materials and their preparation and devices using them

INVENTOR(S): Kathirgamanathan, Poopathy; Price, Richard;

Ganeshamurugan, Subramaniam; Paramaswara, Gnanamoly;
 Kumaraverl, Muttulingham; Partheepan, Arumugam;
 Selvaranjan, Selvadurai; Antipan-Lara, Juan;
 Surendrakumar, Sivagnanasundram
 PATENT ASSIGNEE(S): Elam-T Limited, UK
 SOURCE: PCT Int. Appl., 66 pp.
 CODEN: PIXXD2
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2005080526	A2	20050901	WO 2005-GB446	20050210
WO 2005080526	A3	20051103		
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW			
RW:	BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG			
EP 1723213	A2	20061122	EP 2005-708271	20050210
R:	AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LI, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR			
JP 2007524680	T	20070830	JP 2006-552679	20050210
KR 2007004719	A	20070109	KR 2006-718827	20060914
US 20090009060	A1	20090108	US 2007-589183	20070808
PRIORITY APPLN. INFO.:			GB 2004-3322	A 20040214
			WO 2005-GB446	W 20050210

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

OTHER SOURCE(S): MARPAT 143:275247

GI

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

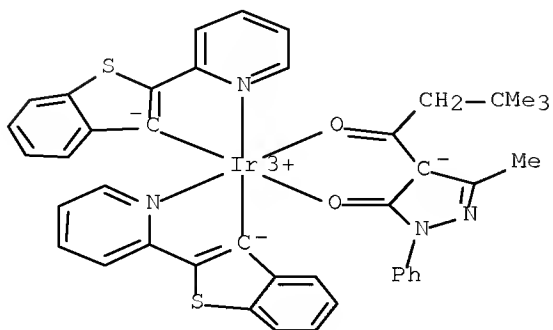
AB Electroluminescent compds. are described by the general formula I, II, and III (R1-6 = independently selected H, (un)substituted hydrocarbyl groups such as (un)substituted aliphatic groups, (un)substituted aromatic, heterocyclic and polycyclic ring structures, fluorocarbons such as trifluoryl Me groups, halogens such as F, or thiophenyl groups; R1, R2 and R3 can form (un)substituted fused aromatic, heterocyclic and polycyclic ring structures and can be copolymerizable with a monomer, e.g. styrene; M = ruthenium, rhodium, palladium, osmium, iridium, or platinum; and n+2 is the valency of M). Methods of preparing the compds. are also described which entail reacting a bridged complex with an appropriate ligand. Electroluminescent devices employing the materials are also described.

IT 863714-50-5F

RL: DEV (Device component use); IMF (Industrial manufacture); PREP (Preparation); USES (Uses)

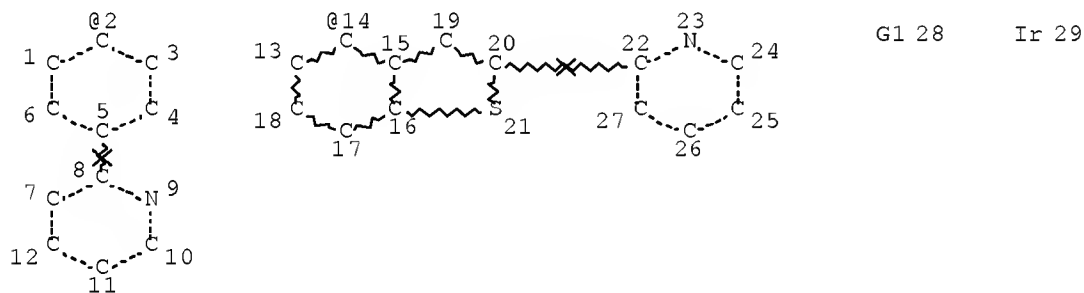
(electroluminescent organometallic materials and their preparation and

devices using them)
 RN 863714-50-5 HCAPLUS
 CN Iridium, [4-[3,3-dimethyl-1-(oxo-κO)butyl]-2-phenyl-2,4-dihydro-5-methyl-3H-pyrazol-3-onato-κO3]bis[2-(2-pyridinyl-κN)benzo[b]thien-3-yl-κC]- (9CI) (CA INDEX NAME)



REFERENCE COUNT: 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

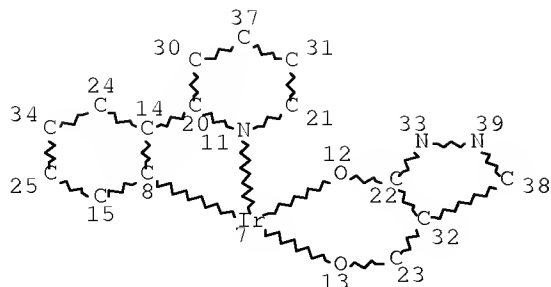
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 DEFAULT ECLEVEL IS LIMITED

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 NUMBER OF NODES IS 29

STEREO ATTRIBUTES: NONE
 L5 15716 SEA FILE=REGISTRY SSS FUL L3
 L26 STR



NODE ATTRIBUTES:

DEFAULT MLEVEL IS ATOM

DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED

NUMBER OF NODES IS 21

STEREO ATTRIBUTES: NONE

L44 13 SEA FILE=REGISTRY SUB=L5 SSS FUL L26

L46 8 SEA FILE=HCAPLUS ABB=ON PLU=ON L44

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L46 ANSWER 1 OF 8 HCAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 2009:1006165 HCAPLUS Full-text

DOCUMENT NUMBER: 153:321072

TITLE: Introduction of new ancillary ligands to the iridium complexes having 2,3-diphenylquinolinato ligands for OLED

AUTHOR(S): Lee, Hyun Shin; Ahn, So Youn; Huh, Hyun Sue; Ha, Yunkyung

CORPORATE SOURCE: Department of Information Display, Hongik University, 72-1 Mapo-gu Sangsoo-dong, Seoul, 121-791, S. Korea

SOURCE: Journal of Organometallic Chemistry (2009), 694(20), 3325-3330

CODEN: JORCAI; ISSN: 0022-328X

PUBLISHER: Elsevier Ltd.

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The effect was studied of an ancillary ligand (AL) on the emission color and luminous efficiencies of its complex, $\text{Ir}(4\text{-Me-2,3-dpq})_2(\text{AL})$, where 4-Me-2,3-dpq represents 4-Me-2,3-diphenylquinolinato ligand. It was expected that ancillary ligand modification by introduction of the bulky substituent to the complexes might allow luminous efficiency increase by reduction of T-T annihilation. Some ancillary ligands may contribute to fine-tuning of their complex emission colors by influencing the energy level of Ir d-orbitals upon the orbital mixing. As new ancillary ligands substituting for acac which is a typical AL in the Ir complexes, pyrazolone-based ligands, 4-R-5-Me-2-phenyl-2,4-dihydro-pyrazol-3-one series (przl-R), were prepared, where R represents C_6H_5 , $\text{C}_6\text{H}_4\text{CH}_3$ and $\text{C}_6\text{H}_4\text{Cl}$. These ligands were chelated to the Ir center to yield the Ir complexes, $\text{Ir}(4\text{-Me-2,3-dpq})_2(\text{przl-R})$. The x-ray crystal structure of $\text{Ir}(4\text{-Me-2,3-dpq})_2(\text{przl-C}_6\text{H}_4\text{Cl})$ was determined. The electrochem. and luminescence properties of the Ir complexes were studied. The effect of the przl-substituents on the emission colors of the complexes was not

significant. The luminous efficiencies of $\text{Ir}(4\text{-Me-2,3-dpq})_2(\text{przl-C}_6\text{H}_5)$ and $\text{Ir}(4\text{-Me-2,3-dpq})_2(\text{przl-C}_6\text{H}_4\text{CH}_3)$ were higher than that of $\text{Ir}(4\text{-Me-2,3-dpq})_2(\text{acac})$.

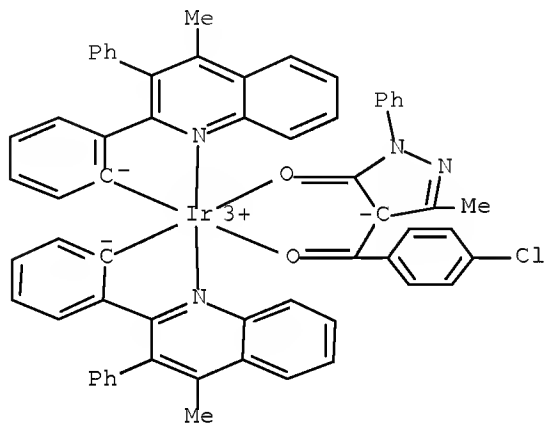
IT 1239951-39-3P

RL: PRP (Properties); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(preparation and crystal and mol. structure and electrochem. and optical properties of)

RN 1239951-39-3 HCAPLUS

CN INDEX NAME NOT YET ASSIGNED



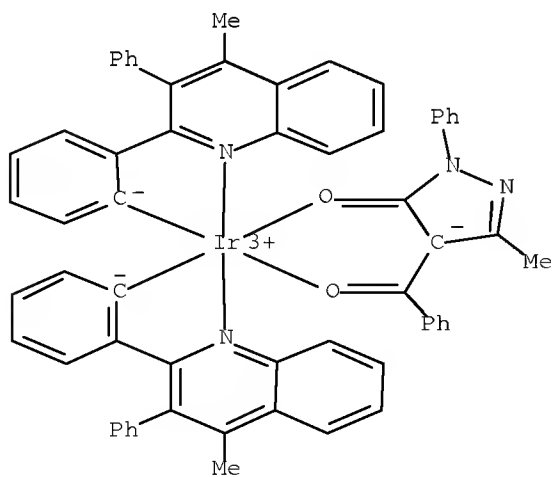
IT 1239951-37-1P 1239951-38-2P

RL: PRP (Properties); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(preparation and electrochem. and optical properties of)

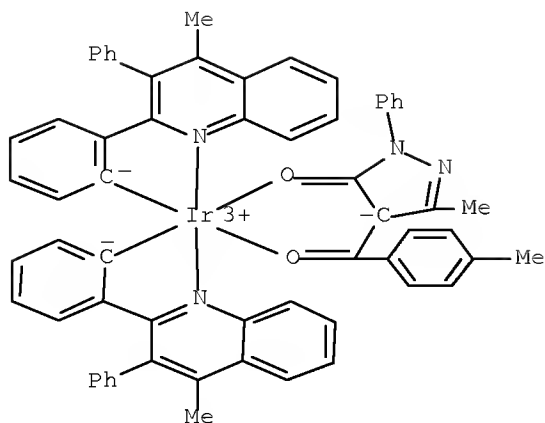
RN 1239951-37-1 HCAPLUS

CN INDEX NAME NOT YET ASSIGNED



RN 1239951-38-2 HCAPLUS

CN INDEX NAME NOT YET ASSIGNED



REFERENCE COUNT: 21 THERE ARE 21 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L46 ANSWER 2 OF 8 HCAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 2007:769202 HCAPLUS Full-text

DOCUMENT NUMBER: 147:352801

TITLE: Red to near-infrared electrophosphorescence from an iridium complex coordinated with 2-phenylpyridine and 8-hydroxyquinoline

AUTHOR(S): Yi, Chun; Yang, Chang-Jian; Liu, Jian; Xu, Min; Wang, Jiang-Huai; Cao, Qian-Yong; Gao, Xi-Cun

CORPORATE SOURCE: Department of Chemistry, School of Science, Nanchang University, Nanchang, 330047, Peop. Rep. China

SOURCE: Inorganica Chimica Acta (2007), 360(11), 3493-3498
CODEN: ICHAA3; ISSN: 0020-1693

PUBLISHER: Elsevier B.V.

DOCUMENT TYPE: Journal

LANGUAGE: English

OTHER SOURCE(S): CASREACT 147:352801

AB An Ir complex coordinated with 2-phenylpyridine (ppy) and 8-hydroxyquinoline (q), ppy₂Irq, was synthesized and its thermal stability, absorption, photoluminescence, crystal structure and electrophosphorescence were characterized. The m.p. of this material reaches ≤374° and does not suffer decomposition upon heating at high vacuum therefore can be well sublimated. When ppy₂Irq was used as a guest emitting material in the electrophosphorescent device, the emission is 100% saturated red light starting at .apprx.600 nm, extending into the near-IR region. The bathochromic shift, compared to the fluorescence and phosphorescence from Alq₃, Ptq₂ and Ir(ppy)₃, was analyzed to originate from the triplet excited state of 8-hydroxyquinoline ligand and the crystal structure anal. excludes the origin of π-π intermol. interactions.

IT 913530-49-1

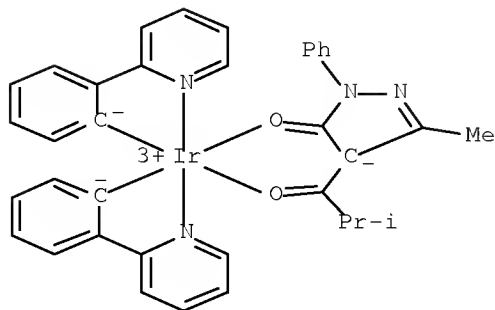
RL: PRP (Properties)

(comparison with data for; red to near-IR electrophosphorescence from an iridium complex coordinated with 2-phenylpyridine and 8-hydroxyquinoline)

RN 913530-49-1 HCAPLUS

CN Iridium, [2,4-dihydro-5-methyl-4-[2-methyl-1-(oxo-κO)propyl]-2-phenyl-3H-pyrazol-3-onato-κO₃]bis[2-(2-pyridinyl-κN)phenyl-

κC]-, (OC-6-44)- (CA INDEX NAME)



OS.CITING REF COUNT: 7 THERE ARE 7 CAPLUS RECORDS THAT CITE THIS RECORD (7 CITINGS)

REFERENCE COUNT: 47 THERE ARE 47 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L46 ANSWER 3 OF 8 HCAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 2006:902543 HCAPLUS Full-text

DOCUMENT NUMBER: 145:471663

TITLE: Synthesis, crystallography and photoluminescence of a new pyrazolonato iridium complex

AUTHOR(S): Yi, Chun; Cao, Qian-Yong; Yang, Chang-Jian; Huang, Li-Qun; Wang, Jiang Huai; Xu, Min; Liu, Jian; Qiu, Ping; Gao, Xi-Cun; Li, Zhi-Feng; Wang, Ping

CORPORATE SOURCE: Department of Chemistry, School of Science, Nanchang University, Nanchang, JiangXi, 330047, Peop. Rep. China

SOURCE: Inorganica Chimica Acta (2006), 359(13), 4355-4359
CODEN: ICHAA3; ISSN: 0020-1693

PUBLISHER: Elsevier B.V.

DOCUMENT TYPE: Journal

LANGUAGE: English

OTHER SOURCE(S): CASREACT 145:471663

AB By using 1-phenyl-3-methyl-4-isobutyl-5-pyrazolone (pmip) as the ancillary ligand, the cyclometalated complex: bis-(2-phenylpyridine)-(pmip)-iridium [(ppy)₂Ir(pmip)] was synthesized. Its crystal structure, absorption and emission were compared with those of its analog, the frequently used electrophosphorescent material (ppy)₂Ir(dbm) [bis-(2-phenylpyridine)-(dibenzoylmethane) iridium]. For (ppy)₂Ir(pmip) in dichloromethane, the emission is highly structured and the intensity is 5 times higher than that of (ppy)₂Ir(dbm). It is a result of the higher triplet energy level of pmip relative to that of dbm. In solid state, green emission of (ppy)₂Ir(pmip) peaked at 550 nm was observed with a quantum efficiency 0.31% in contrast to the emission at 626 nm with a quantum efficiency of 0.76% for (ppy)₂Ir(dbm). The bathochromical shift and higher efficiency in crystallized (ppy)₂Ir(dbm) was explained by the stronger π-π intermol. interactions which is unique to in solid state (ppy)₂Ir(dbm) crystals.

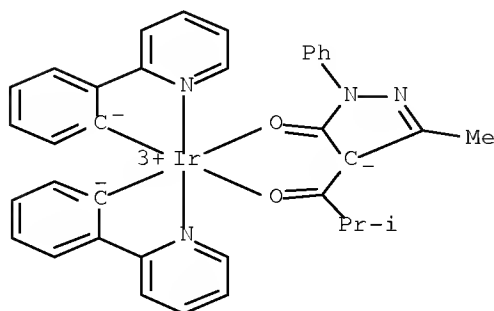
IT ~~913530-49-1F~~

RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(crystal structure; preparation, crystallog., and photoluminescence of cyclometalated phenylpyridine pyrazolonato iridium complex)

RN 913530-49-1 HCAPLUS

CN Iridium, [2,4-dihydro-5-methyl-4-[2-methyl-1-(oxo-κO)propyl]-2-

phenyl-3H-pyrazol-3-onato-κO3]bis[2-(2-pyridinyl-κN)phenyl-κC]-, (OC-6-44)- (CA INDEX NAME)



OS.CITING REF COUNT: 9 THERE ARE 9 CAPLUS RECORDS THAT CITE THIS RECORD (9 CITINGS)

REFERENCE COUNT: 29 THERE ARE 29 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L46 ANSWER 4 OF 8 HCAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 2006:734542 HCAPLUS Full-text

DOCUMENT NUMBER: 145:198513

TITLE: Electroluminescent device fabrication by spin coating electroluminescent organometallic complexes on coated substrates

INVENTOR(S): Kathirgamanathan, Poopathy; Ganeshamurugan, Subramaniam; Price, Richard

PATENT ASSIGNEE(S): Oled-T Limited, UK

SOURCE: PCT Int. Appl., 51 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2006077402	A1	20060727	WO 2006-GB169	20060119
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW			
RW:	AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM			
EP 1839464	A1	20071003	EP 2006-702771	20060119
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CN 101107884	A	20080116	CN 2006-80002852	20060119

JP 2008529212	T	20080731	JP 2007-551736	20060119
US 20080160182	A1	20080703	US 2007-795007	20070710
IN 2007DN05397	A	20070817	IN 2007-DN5397	20070712
KR 2007102556	A	20071018	KR 2007-718852	20070817
PRIORITY APPLN. INFO.:			GB 2005-1426	A 20050122
			WO 2006-GB169	W 20060119

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

OTHER SOURCE(S): MARPAT 145:198513

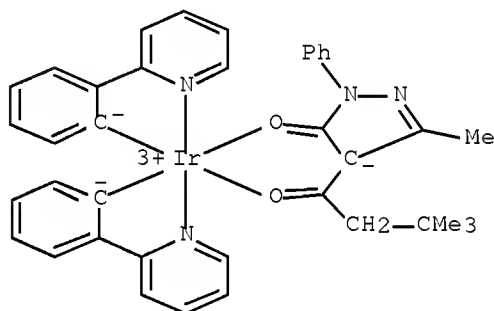
AB Methods of forming electroluminescent devices are described which entail depositing by spin coating a layer of an electroluminescent organometallic complex on a substrate (which is the anode) which is coated with a layer of a polymer. The polymer is preferably a conductive or charge-transporting polymer or material.

IT 647838-95-7

RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process); USES (Uses)
(electroluminescent device fabrication by spin coating
electroluminescent organometallic complexes on coated substrates)

RN 647838-95-7 HCAPLUS

CN Iridium, [4-[3,3-dimethyl-1-(oxo-κO)butyl]-2,4-dihydro-5-methyl-2-phenyl-3H-pyrazol-3-onato-κO3]bis[2-(2-pyridinyl-κN)phenyl-κC]- (CA INDEX NAME)



REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L46 ANSWER 5 OF 8 HCAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 2006:553352 HCAPLUS Full-text

DOCUMENT NUMBER: 145:211157

TITLE: Synthesis and Photophysical, Electrochemical, and Electrophosphorescent Properties of a Series of Iridium(III) Complexes Based on Quinoline Derivatives and Different β-Diketonate Ligands

AUTHOR(S): Zhao, Qiang; Jiang, Chang-Yun; Shi, Mei; Li, Fu-You; Yi, Tao; Cao, Yong; Huang, Chun-Hui

CORPORATE SOURCE: Laboratory of Advanced Materials, Fudan University, Shanghai, 200433, Peop. Rep. China

SOURCE: Organometallics (2006), 25(15), 3631-3638

CODEN: ORGND7; ISSN: 0276-7333

PUBLISHER: American Chemical Society

DOCUMENT TYPE: Journal

LANGUAGE: English

OTHER SOURCE(S): CASREACT 145:211157

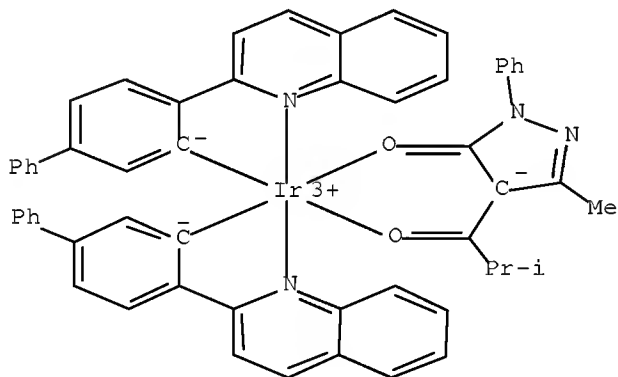
AB The synthesis and photophys., electrochem., and electrophosphorescent properties of a series of cyclometalated iridium(III) complexes based on quinoline derivs. (C-N) and different β -diketonate ligands are reported. The iridium complexes contain two quinoline derivs. (C-N) and a single monoanionic β -diketone (LX), i.e., Ir(C-N)₂(LX), where LX denotes acetylacetonate (acac) or 1-phenyl-3-methyl-4-isobutyryl-5-pyrazolonate (PMIP). Most of the iridium complexes in solution show phosphorescent emission with high quantum efficiencies (0.05-0.25) and microsecond lifetimes (0.5-1.67 μ s). The intense phosphorescent emission of these complexes is the result of significant spin-orbit coupling of the iridium center. By modification of the chemical structures of quinoline derivative ligands, the emissive wavelengths of complexes can be tuned from 596 to 634 nm. Interestingly, the photoluminescence quantum efficiency can be improved by the replacement of acac with PMIP. Energy transfer from the hosts poly(9,9-dioctylfluorene) (PFO) and 2-(4-biphenyl)-5-(4-tert-butylphenyl)-1,3,4-oxadiazole (PBD) to the guest iridium complex was investigated. Moreover, three iridium complexes were used as dopants to fabricate electrophosphorescent polymer-based light-emitting diodes (PLEDs). The PLEDs show red emission with high external quantum efficiencies, ranging from 7.0 to 9.6%.

IT 904925-88-8P

RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); PROC (Process); RACT (Reactant or reagent) (preparation, photophys., electrochem., and electrophosphorescent properties of cyclometalated iridium complexes based on quinoline derivs. and different diketone ligands)

RN 904925-88-8 HCAPLUS

CN Iridium, [2,4-dihydro-5-methyl-4-[2-methyl-1-(oxo- κ O)propyl]-2-phenyl-3H-pyrazol-3-onato- κ O3]bis[4-(2-quinolinyl- κ N)[1,1'-biphenyl]-3-yl- κ C]-, (OC-6-44)- (9CI) (CA INDEX NAME)

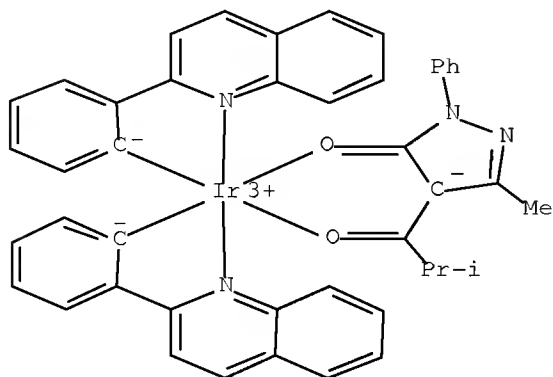


IT 904925-87-7P 904925-90-2P 904925-91-3P
904925-92-4P

RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); PROC (Process) (preparation, photophys., electrochem., and electrophosphorescent properties of cyclometalated iridium complexes based on quinoline derivs. and different diketone ligands)

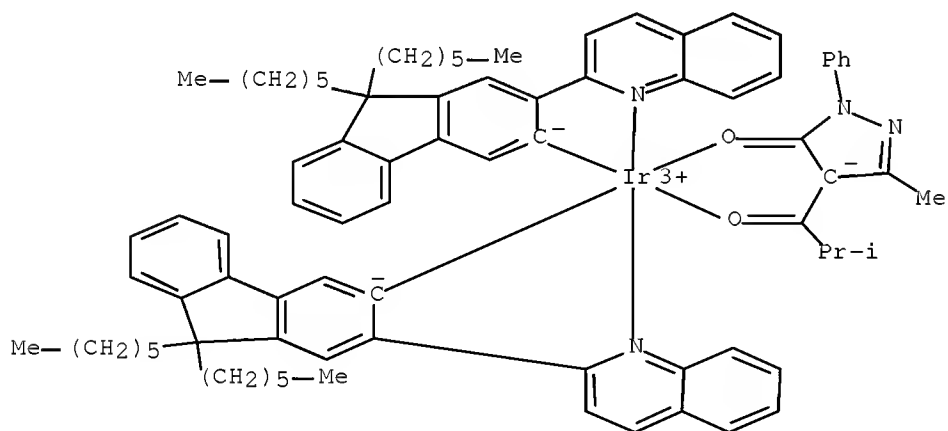
RN 904925-87-7 HCAPLUS

CN Iridium, [2,4-dihydro-5-methyl-4-[2-methyl-1-(oxo- κ O)propyl]-2-phenyl-3H-pyrazol-3-onato- κ O3]bis[2-(2-quinolinyl- κ N)phenyl- κ C]-, (OC-6-44)- (CA INDEX NAME)



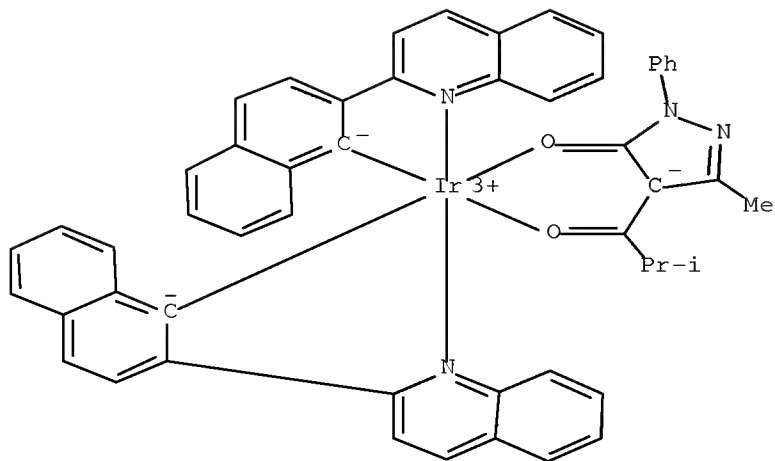
RN 904925-90-2 HCAPLUS

CN Iridium, bis[9,9-dihexyl-2-(2-quinolinyl- κ N)-9H-fluoren-3-yl- κ C][2,4-dihydro-5-methyl-4-[2-methyl-1-(oxo- κ O)propyl]-2-phenyl-3H-pyrazol-3-onato- κ O3]-, (OC-6-44)- (9CI) (CA INDEX NAME)



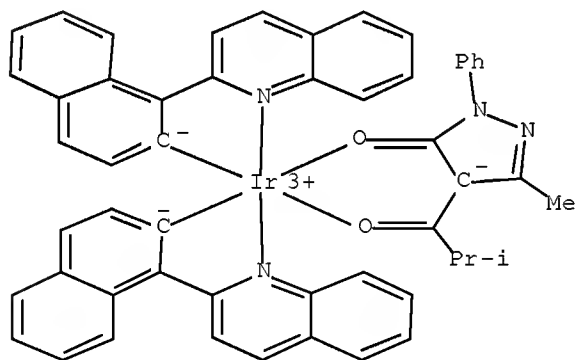
RN 904925-91-3 HCAPLUS

CN Iridium, [2,4-dihydro-5-methyl-4-[2-methyl-1-(oxo- κ O)propyl]-2-phenyl-3H-pyrazol-3-onato- κ O3]bis[2-(2-quinolinyl- κ N)-1-naphthalenyl- κ C]-, (OC-6-44)- (9CI) (CA INDEX NAME)



RN 904925-92-4 HCAPLUS

CN Iridium, [2,4-dihydro-5-methyl-4-[2-methyl-1-(oxo-κO)propyl]-2-phenyl-3H-pyrazol-3-onato-κO3]bis[1-(2-quinolinyl-κN)-2-naphthalenyl-κC]-, (OC-6-44)- (9CI) (CA INDEX NAME)



OS.CITING REF COUNT: 30 THERE ARE 30 CAPLUS RECORDS THAT CITE THIS RECORD (30 CITINGS)

REFERENCE COUNT: 37 THERE ARE 37 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L46 ANSWER 6 OF 8 HCAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 2006:439982 HCAPLUS Full-text

DOCUMENT NUMBER: 144:458233

TITLE: Electroluminescent devices with anode buffer layers

INVENTOR(S): Kathirgamanathan, Poopathy; Ganeshamurugan, Subramaniam; Kumaraverl, Muttulingham; Partheepan, Arumugam; Paramaswara, Gnanamoly

PATENT ASSIGNEE(S): Nuko 70 Limited, UK

SOURCE: PCT Int. Appl., 89 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2006048635	A1	20060511	WO 2005-GB4222	20051101
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM EP 1812530 A1 20070801 EP 2005-800128 20051101 R: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LI, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR JP 2008519427 T 20080605 JP 2007-538521 20051101 US 20080199727 A1 20080821 US 2007-666766 20070625 PRIORITY APPLN. INFO.: GB 2004-24294 A 20041103 WO 2005-GB4222 W 20051101				

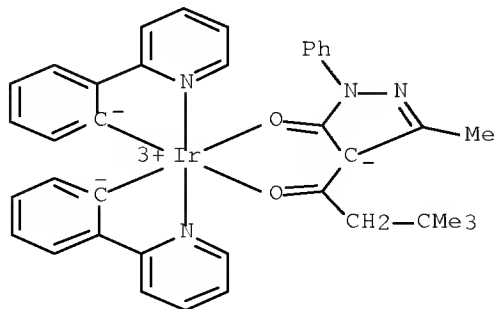
ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

AB Electroluminescent devices are described which are provided with a buffer layer on the anode, the buffer material being selected from metal tetra-p-tolyl porphinato complexes and bianthryl compds. [9,9'-Bianthracene]-10,10'-diamine, N,N'-di-2-naphthalenyl-N,N'-diphenyl- [223735-42-0] or [9,9'-Bianthracene]-10,10'-diamine, N,N'-di-1-naphthalenyl-N,N'-diphenyl-. The electroluminescent materials may be organometallic compds., including multinuclear complexes.

IT 647838-95-7
 RL: DEV (Device component use); USES (Uses)
 (electroluminescent devices with anode buffer layers)

RN 647838-95-7 HCAPLUS

CN Iridium, [4-[3,3-dimethyl-1-(oxo-κO)butyl]-2,4-dihydro-5-methyl-2-phenyl-3H-pyrazol-3-onato-κO3]bis[2-(2-pyridinyl-κN)phenyl-κC]- (CA INDEX NAME)



OS.CITING REF COUNT: 1 THERE ARE 1 CAPLUS RECORDS THAT CITE THIS RECORD (1 CITINGS)

REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS

RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L46 ANSWER 7 OF 8 HCAPLUS COPYRIGHT 2010 ACS on STN
 ACCESSION NUMBER: 2005:962358 HCAPLUS Full-text
 DOCUMENT NUMBER: 143:275247
 TITLE: Electroluminescent organometallic materials and their
 preparation and devices using them
 INVENTOR(S): Kathirgamanathan, Poopathy; Price, Richard;
 Ganeshamurugan, Subramaniam; Paramaswara, Gnanamoly;
 Kumaraverl, Muttulingham; Partheepan, Arumugam;
 Selvaranjan, Selvadurai; Antipan-Lara, Juan;
 Surendrakumar, Sivagnanasundram
 PATENT ASSIGNEE(S): Elam-T Limited, UK
 SOURCE: PCT Int. Appl., 66 pp.
 CODEN: PIXXD2
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2005080526	A2	20050901	WO 2005-GB446	20050210
WO 2005080526	A3	20051103		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG EP 1723213 A2 20061122 EP 2005-708271 20050210 R: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LI, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR JP 2007524680 T 20070830 JP 2006-552679 20050210 KR 2007004719 A 20070109 KR 2006-718827 20060914 US 20090009060 A1 20090108 US 2007-589183 20070808 PRIORITY APPLN. INFO.: GB 2004-3322 A 20040214 WO 2005-GB446 W 20050210				

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

OTHER SOURCE(S): MARPAT 143:275247

GI

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

AB Electroluminescent compds. are described by the general formula I, II, and III (R1-6 = independently selected H, (un)substituted hydrocarbyl groups such as (un)substituted aliphatic groups, (un)substituted aromatic, heterocyclic and polycyclic ring structures, fluorocarbons such as trifluoryl Me groups, halogens such as F, or thiophenyl groups; R1, R2 and R3 can form (un)substituted fused aromatic, heterocyclic and polycyclic ring structures and can be copolymerizable

with a monomer, e.g. styrene; M = ruthenium, rhodium, palladium, osmium, iridium, or platinum; and n+2 is the valency of M). Methods of preparing the compds. are also described which entail reacting a bridged complex with an appropriate ligand.

Electroluminescent devices employing the materials are also described.

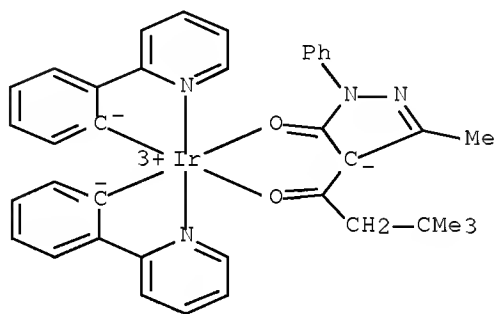
IT 647838-95-7P 863714-47-0P 863714-48-1P
863714-49-2P

RL: DEV (Device component use); IMF (Industrial manufacture); PREP (Preparation); USES (Uses)

(electroluminescent organometallic materials and their preparation and devices using them)

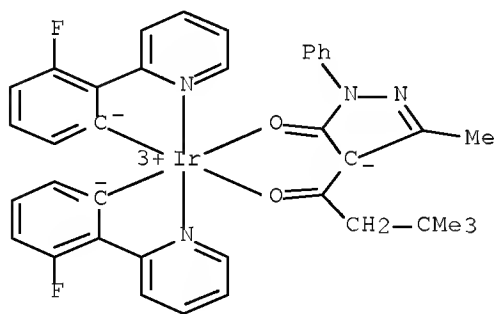
RN 647838-95-7 HCAPLUS

CN Iridium, [4-[3,3-dimethyl-1-(oxo-κO)butyl]-2,4-dihydro-5-methyl-2-phenyl-3H-pyrazol-3-onato-κO3]bis[2-(2-pyridinyl-κN)phenyl-κC]- (CA INDEX NAME)



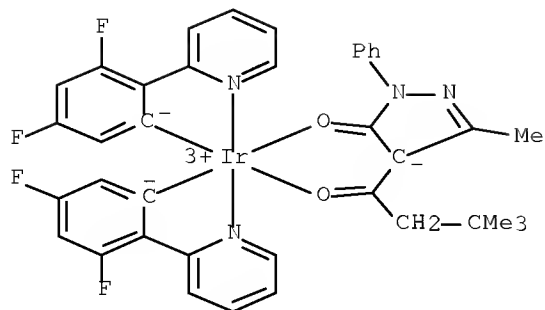
RN 863714-47-0 HCAPLUS

CN Iridium, [4-[3,3-dimethyl-1-(oxo-κO)butyl]-2,4-dihydro-5-methyl-2-phenyl-3H-pyrazol-3-onato-κO3]bis[3-fluoro-2-(2-pyridinyl-κN)phenyl-κC]- (CA INDEX NAME)



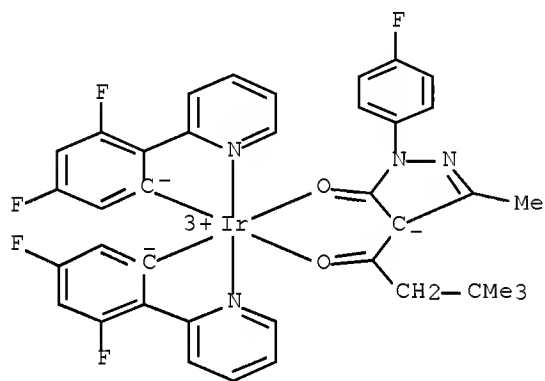
RN 863714-48-1 HCAPLUS

CN Iridium, bis[3,5-difluoro-2-(2-pyridinyl-κN)phenyl-κC][4-[3,3-dimethyl-1-(oxo-κO)butyl]-2,4-dihydro-5-methyl-2-phenyl-3H-pyrazol-3-onato-κO3]- (CA INDEX NAME)



RN 863714-49-2 HCAPLUS

CN Iridium, bis[3,5-difluoro-2-(2-pyridinyl-κN)phenyl-κC][4-[3,3-dimethyl-1-(oxo-κO)butyl]-2-(4-fluorophenyl)-2,4-dihydro-5-methyl-3H-pyrazol-3-onato-κO3]- (CA INDEX NAME)



REFERENCE COUNT: 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L46 ANSWER 8 OF 8 HCAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 2004:60874 HCAPLUS [Full-text](#)

DOCUMENT NUMBER: 140:114240

TITLE: Metal chelates in a photovoltaic device

INVENTOR(S): Kathirgamanathan, Poopathy; Antipan-Lara, Juan; Partheepan, Arumugam

PATENT ASSIGNEE(S): Elam-Limited, UK

SOURCE: PCT Int. Appl., 59 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004008554	A2	20040122	WO 2003-GB3035	20030714
WO 2004008554	A3	20041111		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN,				

CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH,
 GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR,
 LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH,
 PL, PT, RO, RU, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA,
 UG, US, UZ, VN, YU, ZA, ZM, ZW

RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY,
 KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES,
 FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR,
 BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

AU 2003281003 A1 20040202 AU 2003-281003 20030714

PRIORITY APPLN. INFO.:

GB 2002-16154 A 20020712

WO 2003-GB3035 W 20030714

OTHER SOURCE(S): MARPAT 140:114240

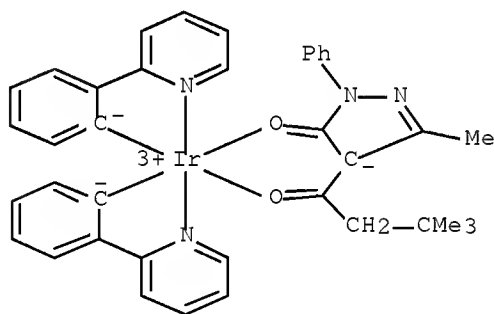
AB A photovoltaic device uses a metal chelate as the photovoltaic element. The device comprises sequentially (1) a first electrode comprising a metal, (2) the photovoltaic element, and (3) a second electrode. The photovoltaic element comprises an organometallic complex with an organic ligand and a metal (a rare earth, transition metal, lanthanide, or an actinide).

IT 647838-95-7

RL: DEV (Device component use); USES (Uses)
 (metal chelates in photovoltaic device)

RN 647838-95-7 HCAPLUS

CN Iridium, [4-[3,3-dimethyl-1-(oxo-κO)butyl]-2,4-dihydro-5-methyl-2-phenyl-3H-pyrazol-3-onato-κO3]bis[2-(2-pyridinyl-κN)phenyl-κC]- (CA INDEX NAME)



OS.CITING REF COUNT: 4 THERE ARE 4 CAPLUS RECORDS THAT CITE THIS RECORD (4 CITINGS)

REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

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